contractions of the muscle and then an imperfect tetanus. This paper bears on the question whether these first reactions of the recovering muscle are due to changes in the muscle or in the nerve during the experiment. The work was done on dogs and the simple method was used of comparing the reaction of the muscles on recovery from curare first, when the nerve was continuously stimulated during the interval preceding recovery and next when it was not so stimulated. Under both conditions the muscle reacted in the same way, and it was therefore concluded that the peculiar reactions were independent of any changes in the nerve due to stimulation, and were muscle phenomena only.

Twelve Lectures on the Structure of the Central Nervous System, for Physicians and Students. By DR. LUDWIG EDINGER. Second revised edition, with 133 illustrations, pp. 230. Translated by W. H. Vittum, M. D., edited by C. Eugene Riggs, M. D. Philadelphia and London. F. A. Davis, 1890.

It has long been felt among those interested in these matters that a translation of the "*Zehn Vorlesungen*," or as it was rechristened in the second edition "*Zwölf Vorlesungen*," of Edinger would facilitate instruction in the finer anatomy of the nervous system in this country. The gentlemen who have made the English version have been conservative in all matters. The nomenclature is that of the English anatomies. No notes are added to the original, and the same illustrations appear in the English that are to be found in the German edition. The English book has more pages owing to the use of larger type and a somewhat smaller page. The contents of Edinger's original book is already familiar and it needs only to be added that the second edition contains some results of the author's studies in the comparative anatomy of the brain, especially that of the fibre tracts; these results have on several occasions been reviewed in this JOURNAL. This translation forms probably as compact, consecutive and practically useful a treatment of the subject as we have in English.

Macroscopic Vocabulary of the Brain with Synonyms and References. Prof. B. G. WILDER.

This pamphlet, which appears so far as we can judge *sumptibus auctoris*, was presented at the last meeting of the Association of American Anatomists held in Boston, Dec. 29, 1890. It contains something over 200 terms which the author recommends for use in the macroscopic description of the brain. They are for the most part mononymic paronyms (*i. e.* words adopted into a modern language without essential change) arranged in alphabetical order and followed by references to standard publications where they are defined by use.

II.—PSYCHIATRY.

RECENT LITERATURE OF GENERAL PARALYSIS.

BY WILLIAM NOYES, M. D.

PRODROMAL STAGE AND EARLY DIAGNOSIS.

The Early Stage of General Paralysis. CHARLES F. FOLSOM, M. D. Transactions of the Association of American Physicians, September, 1889, and the Boston Medical and Surgical Journal, 1889, CXXI, p. 349.

Dr. Folsom's article deals with a stage of general paralysis that has been very little touched on in the books; and the asylum physician rarely,

if ever, sees cases presenting the symptoms here described. The body of the article is a most careful and painstaking analysis of seventeen cases selected with reference to giving the most important points in diagnosis, in which the symptoms preceded by varying periods the time that is usually looked on as the beginning of the disease. A careful study of the cases themselves is necessary for a full appreciation of the obscure and insidious character of the first symptoms, but Folsom's description of the general mental condition in this early stage furnishes an excellent clinical picture of this state. It cannot well be summarized, and its importance warrants giving it in full.

"The question whether the diagnosis of general paralysis can be made in its actual incipiency is still under judgment; I do not know an instance where it has been successful. Indeed it is not within my experience that a physician has been consulted so early. The absence of subjective symptoms and the lack of those naturally observed by others, as compared with the various forms of neurasthenia, for instance, are quite deceptive. But the change in personal traits or character, and the peculiar apathetic, indifferent, unconscious quality of the mental impairment, in uncomplicated cases, are unlike anything else. There is not the slightest doubt, however, that general paralysis can be diagnosticated with certainty far oftener than not, for a considerable length of time before what is usual now. It is quite true that the signs of mental impairment may be ascertained only by a painstaking examination, that the patient may bear cross-questioning without manifesting any degree of loss of those finer qualities of brain, psychic and motor, coming last in a highly organized and developed civilization, although it may at the same time be detected by the methods which I have suggested. The very essence and nature of general paralysis imply and involve mental symptoms in some degree, and some motor impairment, however slight, even if only judged by the test of a minute examination of what the patient can do and how well or how ill he does it. The symptoms may thus be recognized in a large proportion of cases, and at least suspected in most, certainly in those persons whose brains are so highly organized, who are so trained and cultivated that slight changes in the highest brain-centres produce distinct, although difficultly appreciated, departure from their normal character and quality of mind. In an orchestral leader, for instance, the mental and fine mechanical operations are so complex and of such high order that the least fault is detected; in professional and business men a less degree of impairment is recognizable than in mechanics; in routine employments without much thought or nice muscular effort, a large degree of deterioration may be unnoticed. In day laborers an early diagnosis is simply impossible.

"The earliest signs of general paralysis are of the slightest possible brain failure; if, for example, a strong healthy man, in or near the prime of life, distinctly not of the "nervous," neurotic or neurasthenic type, shows some loss of interest in his affairs, or impaired faculty of attending to them; if he becomes varyingly absent-minded, heedless, indifferent, negligent, apathetic, inconsiderate, and although able to follow his routine duties, his ability to take up new work is, no matter how little, diminished; if he can less well command mental attention and concentration, conception, perception, reflection, judgment; if there is an unwonted lack of initiative, and if exertion causes unwonted mental and physical fatigue; if the emotions are intensified and easily change, or are excited easily from trifling causes; if the sexual instinct is not reasonably controlled; if the finer feelings are even slightly blunted; if the person in question regards with a placid apathy his own acts of indifference and irritability and their consequences, and especially if at times he sees himself in his true light and suddenly again fails to do so; if any symptoms of cerebral vaso-motor dis-

turbance are noticed, however vague or variable. Naturally there may be many or few of these indications in a given person. This group of symptoms seems very striking, but may be compatible with the performance of usual duties. They require careful and prolonged observations of the patient, and painstaking interrogation of his family and friends for their detection. They are recognized perhaps as much from the peculiar mental quality of the mental impairment, difficult to describe, as from its degree, and often ante-date, at least in the time of their recognition, perhaps not absolutely, any physical symptoms, which when they appear, may be so slight as not to be appreciated for a long time, except as an unusual sense of weariness on exertion, and perhaps attributed to malaria or rheumatism. Commonly there is loss of flesh, slight, moderate, or excessive. A very great or disproportionate loss of physical power, especially in the legs, I have found to be due to a complicating peripheral neuritis. We must not overlook the facts that there are elements of uncertainty in the early diagnosis of general paralysis, that there are few forms of mental disease in adult life that it may not simulate in obscure cases, and that it may be confounded with Bright's disease, epilepsy, hysteria, lead or malarial poisoning, cerebral syphilis, or the long-continued abuse of opium, alcohol, chloral, and the bromides, so that not seldom an absolute early diagnosis is impossible. But there is a peculiar, indescribable form of mental impairment which, with the vague physical deterioration, if not obscured by other conditions, may be sufficient to decide the diagnosis. Even the expression of the face and the general appearance of the patient are often characteristic. There may or may not be slight confusion, a sense of fullness in the head, headache, insomnia. Except for unusual physical as well as mental fatigue following effort, the patient may feel entirely well and not complain of anything. There is no indication from the eyes or reflexes so early; the muscular tremor is, as a rule, less than in functional nervous disorders; the speech may be not noticeably affected to the family, and may be only like that of a person with lips chilled by frost or slightly under the influence of wine. It may be necessary to have the patient read or copy several pages or even be under close observation for several days before any defect is observed in the use of the muscles, or it may be necessary to test him in a new place or occupy him in unaccustomed ways. Finally, perhaps the distinguishing feature of this stage of general paralysis is the fact that the change observed consists in a symmetrical mental and physical deterioration which, like all diseases in which a vaso-motor element is prominent, varies very much from time to time. It begins, or is first noticed, in those acts requiring the most complicated and highly coördinated effort, in the functions and powers coming last in development of the highly organized and trained brain. As the mind becomes decidedly less able and the muscles less responsive, with less coördinating power, and finally weaker, the heavy and then staggering gait, the hesitating, stuttering and finally unintelligible speech, and the progressive dementia, may be slow or rapid in their advance.

"The prognosis of the pronounced general paralysis of the books is so unfavorable that there are only exceptional remissions of the symptoms, which last so long as to justify a few writers in calling them cures. Early symptoms, however, which in men of forty years of age, so far as we now know, almost certainly mean death, when occurring in men of sixty are not incompatible with a fair recovery. In the stage of general paralysis that I have attempted to describe, it is true that there have been thus far only partial recoveries. But the indications are that a certain proportion of cures may be expected with more satisfactory treatment. The treatment of general paralysis has thus far been most unsatisfactory from the fact that it is begun only very late; because a

rest of a few months often brings such relief that further treatment is abandoned; because a remission which may naturally come in the course of the malady is too apt to satisfy the patient or the friends that the disease is at an end; and because our therapeutic measures have thus far proved, as a rule, so ineffective that we cannot often get our patients to consent to a great sacrifice of time and money, and all that goes with it, for a cure that at best may mean only comfortable uselessness for many years. The travelling or stimulating life usually suggested ends in aggravation of symptoms. Entire mental rest in a quiet place in a sedative climate, with simple food, abundance of sleep and moderate exercise, results in such improvement that there is every reason to suppose that such measures, if fully carried out, might do more."

PATHOLOGY.

Die pathologische Anatomie der Dementia paralytica. E. MENDEL. Neurologisches Centralblatt, 1890, No. 17, p. 519.

In the section for Neurology and Psychiatry of the Tenth International Congress Prof. Mendel gave a review of the present condition of the pathology of *Dementia paralytica*. The extended and careful researches of the last ten years lead him to think that further light on this subject cannot be expected, at least from the methods of investigation at present at command. He passes over without consideration all the changes in the skull, dura and pia about which there is no dispute, as well as the gross anatomical relations, such as atrophy of the convolutions and diminution in brain weight, and considers only the results of the microscopical examination of the brain.

The Neuroglia. Increase of the nuclei is a very common occurrence. The spider-cells also frequently show a great increase and extension. In this connection Golgi's staining has given especially beautiful results. Nuclei as well as spider-cells are present in normal brains, but in smaller numbers, and the last only of very small dimensions, while in general paralysis they exceed the normal size three or four times, or even more. In the normal brain spider-cells are mostly clearly seen only under the surface of the brain, while in general paralysis they are scattered throughout the entire thickness of the cortex. This last condition is also sometimes found in the neighborhood of encephalitic deposits and syphilitic neoplasms, but in these cases only in circumscribed places, while in paralysis it is more extended in the frontal and parietal lobes, especially in the central convolutions, and also in the basal portions of the frontal lobes. It is this spider-cell development which, pushing its way through the white substance, finally comes out on the exposure of ventricles as ependyma proliferation. The brain substance in long continued cases finally falls away in a confusion of fibres: sclerosis; if this process is strongly developed in the medullary laminæ, especially if the autopsy is made somewhat long after death, and the cortex has undergone a slight post mortem softening, the cortex can be separated from the medullary substance with the back of the scalpel, as Baillarger, Rey and Tuczek have pointed out. The separation as a rule takes place in the cortex itself, so that pieces of this remain attached to the medullary substance.

The Vessels. The larger brain vessels in general paralysis are more frequently intact, or show only a trifling amount of change, at times being more or less atheromatous. With the present methods of investigation it is in many cases difficult to say anything accurate and trustworthy of the condition of the small arteries and capillaries which lie in the ground substance. Notwithstanding this, however, it has been possible hitherto in most cases of paralysis to point out certain morbid changes in the vessels: increase of the nuclei in the vessel walls and